

CLAIMS

1. A curable fluoroelastomer composition comprising:
 - a perfluoropolymer having one or more cure-sites selected from a halogen capable of participating in peroxide cure reaction and/or nitrile groups;
 - an organic peroxide and/or a compound capable of effecting curing of the perfluoropolymer through said nitrile groups; and
 - optionally a polyunsaturated coagent;

5 characterized in that the perfluoropolymer is essentially free of ionic end groups and wherein the total amount of metal cations in the composition is not more than 10 μ g/g perfluoropolymer.

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2. A curable fluoroelastomer composition according to claim 1 wherein said perfluoropolymer comprises one or more units derived from a perfluorinated olefin having nitrile groups or a perfluorinated vinyl ether having one or more nitrile groups.

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3. A curable fluoroelastomer composition according to claim 1 wherein the perfluoropolymer is free of ionic end groups or comprises ionic end groups in an amount such that the absorbance ratio determined by calculating the integrated peak intensity within the range of 1840 cm^{-1} – 1620 cm^{-1} to the integrated peak intensity in the range 2740 cm^{-1} – 2220 cm^{-1} in a Fourier transform infrared spectrum of the perfluoropolymer, is less than 0.1.

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4. A curable fluoroelastomer composition according to claim 1 wherein the perfluoropolymer is a perfluoropolymer obtained through an aqueous emulsion polymerization process.

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5. A curable fluoroelastomer composition according to claim 1 wherein the perfluoropolymer comprises repeating units of a fluorinated olefin selected from the group consisting of tetrafluoroethylene and chlorotrifluoroethylene and a perfluorinated monomer selected from perfluorinated C₃-C₈ olefins, perfluorinated vinyl ethers and mixtures thereof.

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6. A cured fluoroelastomer obtained by curing a curable fluoroelastomer composition as defined in claim 1.

7. Use of a cured fluoroelastomer defined in claim 6 in the manufacturing of electronic components.

8. Method of making a perfluoropolymer for use in a curable fluoroelastomer
5 composition as defined in claim 1, comprising (i) an aqueous emulsion polymerization of a fluorinated monomer selected from tetrafluoroethylene, chlorotrifluoroethylene and mixtures thereof, a fluorinated monomer selected from perfluorinated C₃-C₈ olefins, perfluorinated vinyl ethers and mixtures thereof and one or more fluorinated cure-site monomers selected from perfluorinated monomers having one or more halogen atoms capable of participating in a
10 peroxide cure reaction or one or more nitrile groups, whereby the polymerization is being initiated with an initiator system selected from a combination of a fluoroaliphatic sulfinate and an oxidizing agent capable of oxidizing the sulfinate to a sulfonyl radical and/or a combination of a free radical initiator and a chloride salt such that the resulting perfluoropolymer is
15 essentially free of ionic end groups and (ii) isolating the perfluoropolymer formed from the resulting aqueous dispersion.

9. Method according to claim 8 wherein said perfluoropolymer is isolated from the resulting aqueous dispersion by adding thereto a sufficient amount of a metal salt to cause coagulation of the perfluoropolymer particles in the dispersion.

20 10. A perfluoropolymer obtained by an aqueous emulsion polymerization and comprising units derived from a fluorinated monomer selected from tetrafluoroethylene, chlorotrifluoroethylene and mixtures thereof, one or more units derived from a fluorinated monomer selected from perfluorinated C₃-C₈ olefins, perfluorinated vinyl ethers and mixtures thereof and one or more units deriving from fluorinated cure-site monomers selected from perfluorinated monomers having one or more halogen atoms capable of participating in a
25 peroxide cure reaction or one or more nitrile groups, the perfluoropolymer comprising perfluoroaliphatic end groups and/or CF₂Cl end groups and being essentially free of ionic end groups and the amount of metal ions contained in the perfluoropolymer being less than 10 μ g/g
30 of perfluoropolymer.